IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Huppi	Attorney Docket No.: APL1P213/P2662
Application No.: 10/072,765	Examiner: Osorio, Ricardo
Filed: February 7, 2002	Group: 2673
Title: MOUSE HAVING A ROTARY DIAL	Confirmation No.: 2916

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first-class mail on February 21, 2006 in an envelope addressed to the Commissioner for Patents, Mail Stop Appeal Brief-Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

Signed: Linda L. Pollock
Linda L. Pollock

APPEAL BRIEF TRANSMITTAL
(37 CFR 192)

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on November 22, 2005.

This application is on behalf of

☐ Small Entity ☒ Large Entity

Pursuant to 37 CFR 1.17(f), the fee for filing the Appeal Brief is:

☐ $250.00 (Small Entity) ☒ $500.00 (Large Entity)

☒ Applicant hereby petitions for a one-month (1) extension of time to under 37 CFR 1.136.

If an additional extension of time is required, please consider this a petition therefor.

☐ An extension for months has already been secured and the fee paid therefor of $ is deducted from the total fee due for the total months of extension now requested.

☒ Applicant believes that no additional Extension of Time is required. However, if it is determined that such an extension is required, Applicant hereby petition that such an extension

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01 FC:1402 500.00 OP
02 FC:1251 120.00 OP

be granted and authorizes the Commissioner to charge the required fees for an Extension of Time under 37 CFR 1.136 to Deposit Account No. 500388.

Total Fee Due:

Appeal Brief fee	$500
Extension Fee (if any)	$120
Total Fee Due	$620

☒ Enclosed is Check No. 29265 in the amount of $620.00.

☒ Charge any additional fees or credit any overpayment to Deposit Account No. 500388, (Order No. APL1P213). Two copies of this transmittal are enclosed.

Respectfully submitted,
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF APPEALS

EX PARTE HUPPI

Application for Patent

Filed February 7, 2002

Application No. 10/072,765

FOR:

MOUSE HAVING ROTARY DIAL

APPEAL BRIEF

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Signed: Linda L. Pollock

Linda L. Pollock

BEYER WEAVER & THOMAS, LLP
Attorneys for Applicant

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I. REAL PARTY IN INTEREST

The real party in interest is Apple Computers, Inc., the assignee of the present application.

II. RELATED APPEALS AND INTERFERENCES

The undersigned is not aware of any related appeals and/or interferences.

III. STATUS OF CLAIMS

There are a total of 52 claims pending in this application (claims 1-4, 8, 11-29, 31-35, 37-38, and 41-61). Claims 5-7, 9-10, 30, 36 and 39-40 have been canceled during prosecution.

Claims 1-4, 8, 11-17, 20-29, 31, 37-38, 41-43, 56 and 58 stand rejected under 35 USC §102(b) as being anticipated by PCT Publication No. WO 99/49443 to Rosenberg et al. (hereinafter Rosenberg).

Claim 18 stands rejected under 35 USC §103(a) as being unpatentable over Rosenberg in view or U.S. Patent Publication No. US 2002/1058844 to McLoone et al. (hereinafter McLoone).

Claims 19, 32, 33, 53, 55, 59 and 60 stand rejected under 35 USC §103(a) as being unpatentable over Rosenberg in view of JUSTY UMN-10 (Justy "Buttonless" Scroll Mouse, 10/10/2001, hereinafter Justy).

Claims 43 and 54 stand rejected under 35 USC §103(a) as being unpatentable over Rosenberg in view applicant's admitted prior art (hereinafter APA).

Claim 57 stands rejected under 35 USC §103(a) as being unpatentable over Rosenberg in view or U.S. Patent Publication No. US 2003/0098851 to Brink (hereinafter Brink).

Claims 34-35 and 44-52 are allowed and claim 61 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-4, 8, 11-29, 31-33, 37-38, 41-43, and 53-60 are appealed in this brief.

IV. STATUS OF AMENDMENTS

There are no unentered amendments in the present application.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1

The present invention relates generally to a mouse for use in a computer system. More particularly, the present invention relates to scrolling features for a mouse.

Claim 1 specifies that the computer mouse includes "...a rotary dial positioned relative to an external surface of the housing... the rotary dial rotating around an axis in order to implement a control function in the computer system, the rotary dial rotating within a plane that is substantially parallel to the external surface of the housing..."

An exemplary embodiment of a computer mouse having these features is shown in FIG. 2 (which is also reproduced below). The rotary dial 48 is arranged to rotate around an axis in order to implement a control function such as scrolling. As can be seen in FIG. 2, the rotary dial 48 is configured to rotate within a plane that is substantially parallel to the external surface of the housing 42.

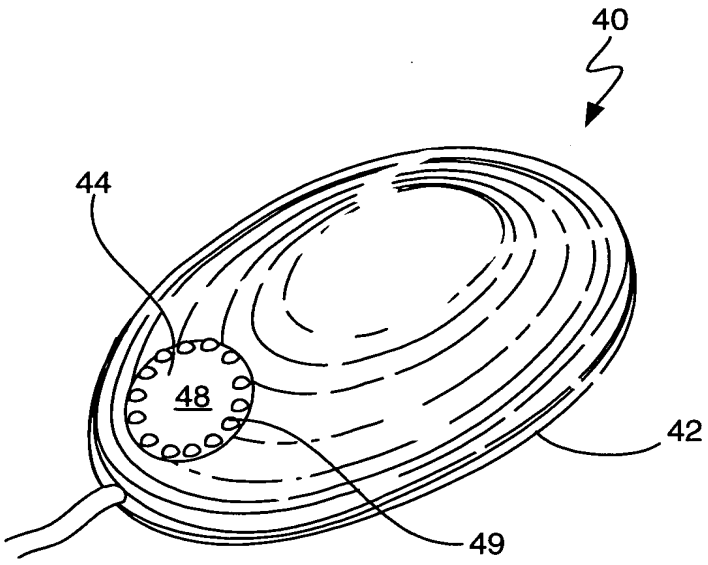


FIG. 2

Claim 1 further specifies "...the rotary dial having an engageable face for allowing a user to facilitate rotation of the rotary dial, the engageable face being completely exposed to the user." This makes the rotary dial easily accessible to the user, that is, the rotary dial provides a large surface for manipulation thereof. As the face of the rotary dial is completely exposed to the user, the rotary dial can be continuously rotated through 360 degrees of rotation without stopping and changing finger positions. Furthermore, the rotary dial can be rotated tangentially from all sides thus giving it a large range of possible finger positions. For example, a left handed user may choose to use one portion of the rotary dial while a right handed user may choose to use another portion of the rotary dial. In essence, this produces a more ergonomic mouse design. Further still, the rotary dial does not protrude out of the mouse, thus reducing the amount of accidental scrolling that may occur with conventional vertically oriented mouse wheels, while making the computer mouse more aesthetically pleasing. The rotary dial typically follows the contour of the mouse housing, making it appear as if it were a portion of the mouse housing. Further still, the rotary dial provides a more intuitive way to scroll. For example, the user can manipulate the rotary dial side to side for horizontal scrolling and backwards and forwards for vertical scrolling.

Independent claim 12

Independent claim 12 defines a computer mouse having "a disk coupled to the mouse housing and rotatable about an axis...the disk having a touchable surface for rotating the disk about the axis, the touchable surface being completely accessible to a finger of the user such that the disk can be continuously rotated by a simple swirling motion of the finger." These features and their advantages ought to be clear in view of the discussion provided above with respect to claim 1, and will therefore not be addressed in any greater detail here.

Independent claim 20

Independent claim 20 defines a computer mouse having "a disk positioned relative to an external surface of the mouse housing, the disk being rotatably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, the disk having a user input receiving surface for facilitating movements thereof about the axis." Thus, claim 20, similar to claims 1 and 12, describes a mouse with a disk that can be rotated, but is primarily focused on how the disk rotates in relation to the housing of the mouse. In addition, claim 20 differs from claims 1 and 12 in that it further requires "an encoder for monitoring the rotation of the disk about the axis." It is believed that the limitations of claim 20 ought to be clear in view of the above discussion, so no further details will be provided here.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(a) Whether claims 1-4, 8, 11-17, 20-29, 31, 37-38, 41-43, 56 and 58 are anticipated under 35 USC §102(b) by PCT Publication No. WO 99/49443 to Rosenberg et al. (hereinafter Rosenberg).

(b) Whether claim 18 is unpatentable under 35 USC §103(a) over Rosenberg in view or U.S. Patent Publication No. US 2002/1058844 to McLoone et al. (hereinafter McLoone).

(c) Whether claims 19, 32, 33, 53, 55, 59 and 60 are unpatentable under 35 USC §103(a) over Rosenberg in view of JUSTY UMN-10 (Justy "Buttonless" Scroll Mouse, 10/10/2001, hereinafter Justy).

(d) Whether claims 43 and 54 are unpatentable under 35 USC §103(a) over Rosenberg in view applicant's admitted prior art (hereinafter APA).

(e) Whether claim 57 is unpatentable under 35 USC §103(a) over Rosenberg in view or U.S. Patent Publication No. US 2003/0098851 to Brink (hereinafter Brink).

VII. ARGUMENT

A) The rejection of claims 1-4, 8, 11-17, 20-29, 31, 37-38, 41-43, 56 and 58 under 35 U.S.C. §102(b)

1. Independent claim 1

Claim 1 stands rejected over Rosenberg, which is directed to force feedback and how it is applied to various wheels or knobs, in particular, applying a force to a wheel or knob in response to a user action. The force provides a physical sensation to the user manipulating the wheel or knob. Rosenberg describes several examples of well-known devices that have wheels or knobs with which his force feedback system can be used. By way of example, Rosenberg describes mice with vertical scroll wheels, remote controls with knobs, amplifiers with knobs, joysticks with a finger wheel, stereo systems with control knobs, auto temperature control systems with control knobs, navigation systems with control knobs, and so on. Of particular relevance are the mice having a vertical scroll wheel and remote controls having a knob as the Examiner has relied on these in rejecting claim 1.

As discussed on page 10, Rosenberg discloses a mouse 12 including buttons 15 and a mouse wheel 16. This mouse is similar to the mouse described in the background of the present invention in that the mouse includes both mechanical buttons and a vertical scroll wheel disposed between the mechanical buttons. As shown in Fig. 1 of Rosenberg (which is reproduced below), the wheel 16 partially protrudes from an aperture in the housing of the mouse and rotates about an axis oriented in the illustrated x-direction.

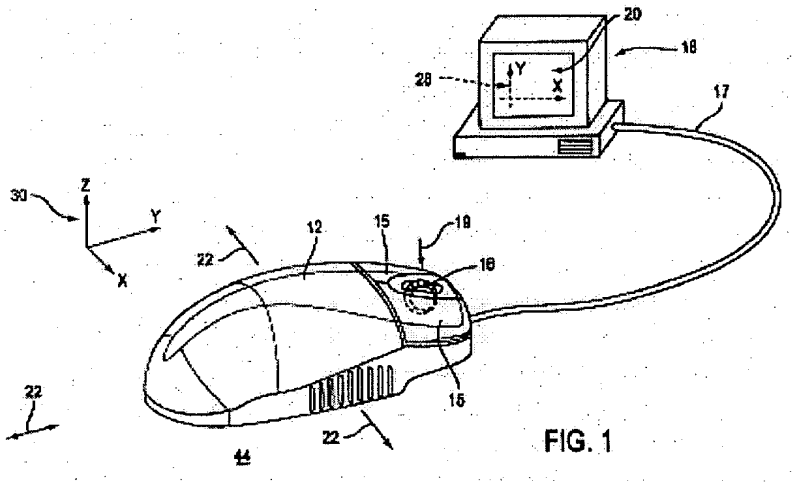
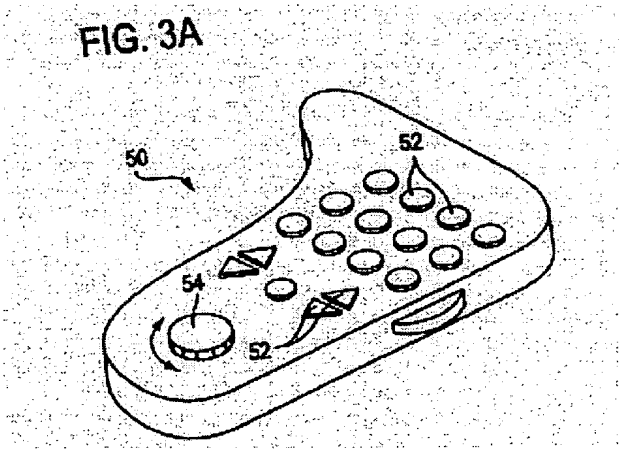


FIG. 1

As discussed on page 15, Rosenberg also discloses a handheld remote control device 50 including a control knob 54. Fig. 3A, which illustrates the remote control device and the control knob 54 are shown below. The remote control device is used to access the functions of an electronic device or appliance by a remote user. The control knob 54 is oriented with an axis of rotation approximately perpendicular to the surface of the remote control. Similar to Rosenberg's mouse wheel 16, the control knob 54 is provided with force feedback, which may take a variety of formats, such as "force dents" which attract the control knob to a particular rotational position and resist movement of the know away from that position, "bumps" which indicate that a particular position on the control knob has been rotated past, a "spring force" which provides resistance to rotational movement of the control knob in either direction, a "damping force sensation" to slow down the rotation of the control knob, or "multiple simultaneous force effects," all of which are described on page 16 of Rosenberg. Rosenberg also states that the control knob 54 can be provided on a radio, tuner, amplifier, or other electronic device, rather than the remote control device 50.

FIG. 3A



Since neither the mouse 12 nor the handheld remote control device 50 in Rosenberg teaches a mouse having a rotary dial, as recited in claim 1, the Examiner relies on combining the mouse 12 and the control knob 54 of the remote control device 50 in Rosenberg to reject claim 1 (as well as the other independent claims of the application).

In contrast to Rosenberg's mouse, claim 1 specifically requires, "...a rotary dial positioned relative to an external surface of the mouse housing...the rotary dial rotating within a plane that is substantially parallel to the external surface of the mouse housing..." While Rosenberg may disclose a mouse 12 having a mouse wheel 16, Rosenberg fails to teach or suggest a mouse wheel that rotates in a plane substantially parallel to the surface of the mouse.

As can be see in FIG. 1 of Rosenberg, the mouse wheel 16 intersects the surface of the mouse 12 rather than being parallel to the surface of the mouse 12, and is no different from conventional vertical scroll wheels in this aspect. Vertical scroll wheels of this type have several drawbacks that can be avoided with the applicant's invention, as defined in claim 1. For example, because a portion of the vertical scroll wheel protrudes above the top surface of the mouse, inadvertent or accidental scrolling may occur when one of the two buttons is activated. Moreover, because the vertical scroll wheel can only be manipulated in a single degree of freedom, the use of the scroll wheel becomes counter intuitive when scrolling in a directions other than up and down, as for example horizontal directions that are side to side rather than up and down. Still further, the protruding scroll wheel is not aesthetically pleasing and thus it presents industrial design difficulties.

Also in contrast to Rosenberg's mouse, claim 1 specifically requires, "...the rotary dial having an engageable face for allowing a user to facilitate rotation of the rotary dial, the engageable face being completely exposed to the user ..." In Rosenberg, a portion of the mouse wheel 16 is always positioned within the mouse 12 and therefore its not completely exposed to the user. *See* for example, Fig. 1 of Rosenberg, which shows the non-exposed portions of mouse wheel 16 using hidden lines. Since only a small portion of the mouse wheel can be used at any one time, a user cannot continuously turn the mouse wheel. That is, the user must scroll, pick up a finger, scroll, pick up a finger, and so on. This takes time and can be an annoyance to a user. Furthermore, Rosenberg's mouse wheel 16 only provides a single finger position for accessing the mouse wheel (e.g., same position for left and right handed users). All of these drawbacks can be avoided with by completely exposing the engageable face of a rotary dial to a user, as specified in claim 1.

With respect to Rosenberg's remote control device 50, this (and all the other alternative devices listed) is not a computer mouse, as required by claim 1. In particular, claim 1 requires that "...the housing providing a platform for sliding the mouse along a surface in order to move a cursor or pointer on a display screen of a computer system..." No such housing is provided in Rosenberg's remote control device 50, and sliding Rosenberg's remote control device 50 along a surface would not result in a cursor or pointer being moved on a display screen of a computer system.

Furthermore, Rosenberg's control knob 54 (and the mouse wheel 16), is provided with force feedback, as described above. In contrast, no such force feedback is provided in the rotary dial of the applicant's computer mouse, as described in claim 1. In fact, having such a force

feedback in the rotary dial might have adverse effects on, for example, the user's ability to continuously turn the rotary dial.

Rosenberg offers no suggestion or motivation to place the control knob 54 of the remote control device 50 on the mouse 12. Whereas Rosenberg may suggest alternative positions for the control knob 54 on the remote control device 50, there is no mention or suggestion to move the control knob 54 from the remote control device 50 to the mouse 12. That is, Rosenberg does not disclose, show or suggest a computer mouse with a rotary dial "rotating within a plane that is substantially parallel to the external surface of the housing...the rotary dial having an engageable face...being completely exposed to the user", as required by claim 1.

Furthermore, as stated above, page 16 of Rosenberg lists several devices where the control knob can be alternatively used, and in this list he fails to mention a computer mouse. This omission further emphasizes that Rosenberg did not contemplate a mouse with a rotary dial as taught in the present invention.

In fact, it appears that the Examiner has used hindsight reconstruction of Rosenberg with the applicant's own disclosure as a blueprint to recreate the invention from indirect teachings and links in Rosenberg. If the Examiner did not have the applicant's invention in front of him, there is no way that he (or anyone skilled in the art) would have come up with the claimed invention based on the teachings in Rosenberg alone. In fact, because Rosenberg teaches a mouse with mechanical buttons, one skilled in the art would not be motivated to place the control knob on the mouse, as the control knob would take up too much space in the area where Rosenberg's mouse buttons need to go. Because the mouse wheel 16 is vertical it can be placed between the buttons so that the area of the buttons can be maximized. A horizontal mouse wheel or control knob would take up too much space, thereby eliminating the buttons or making them too small for practical use. This would be sufficient to prevent anyone from making a link between the control knob and the mouse as did the Examiner.

Therefore, it is respectfully requested that the Board reverse the Examiner's rejection and return the application to the Examiner with instructions to allow the application.

2. Independent claim 12

The rejection to claim 12 should be withdrawn for similar reasons as discussed above with respect to claim 1. Claim 12 requires "...a disk coupled to the mouse housing...the disk having a touchable surface for rotating the disk about an axis, the touchable surface being completely accessible to a finger of the user such that the disk can be continuously rotated by the

simple swirling motion of the finger." Again, the major portion of the mouse wheel 16 in Rosenberg is hidden beneath the housing of mouse 12, thus making it inaccessible to the users finger. Furthermore, Rosenberg does not show or describe a mouse with a control knob 54 of the remote control, and even if he did, Rosenberg does not provide any support as to how it is configured in relation to the mouse.

Therefore, it is respectfully requested that the Board reverse the Examiner's rejection and return the application to the Examiner with instructions to allow the application.

3. Independent claim 20

Claim 20 specifically requires, "...a disk positioned relative to an external surface of the mouse housing, the disk being rotatably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, the disk having a user input receiving surface for facilitating movements thereof about the axis..." While Rosenberg may disclose a mouse 12 having a mouse wheel 16 that rotates around an axis, Rosenberg fails to teach or suggest a mouse wheel 16 that rotates around an axis that is normal to the surface of the mouse 12 where it is positioned relative to the mouse. In Rosenberg, the wheel axis is parallel to the surface of the mouse. With regards to control knob 54, no mention is made to placing this particularly arranged control knob 54 on the mouse 12; nor is there a need to do so in view of the buttons employed in the Rosenberg mouse. Rather, the control knob 54 is placed on a remote control device 50 or on a gamepad controller 60. Neither of these devices can be considered a mouse and again Rosenberg provides no support for placing the control knob on the mouse.

While Rosenberg may state that the control knob 54 can be oriented similarly to the mouse wheel 16 (page 16, lines 1-4), he does not teach or suggest a mouse wheel 16 that can be oriented similarly to the control knob 54, which is an important distinction. That is, Rosenberg does not disclose, show or suggest a mouse wheel that is oriented with an axis of rotation approximately perpendicular to the surface of the mouse housing, as required by claim 20.

Therefore, it is respectfully requested that the Board reverse the Examiner's rejection and return the application to the Examiner with instructions to allow the application.

4. Dependent claims 2-4, 13-17 and 23-24

Claims 2-4 depend from independent claim 1, claims 13-17 depend from independent claim 12, and claims 23-24 depend from independent claim 20, respectively, and are therefore

submitted to be patentable over the art of record for at least the reasons set forth above with respect to claims 1, 12 and 20. Furthermore, dependent claims 2-4, 13-17 and 23-24 recite various examples of the "control function" recited in the respective independent claims. This control function is implemented by the rotary dial in the applicant's invention, whereas Rosenberg specifies that his vertical mouse wheel is implementing similar types of functionalities.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claims 2-4, 13-17 and 23-24 unpatentable under 35 U.S.C. §102(b).

5. Dependent claim 8

Claim 8 depends from independent claim 1 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1. Furthermore, claim 8 specifically requires, "wherein the engageable face is substantially parallel to the external surface of the housing." Again Rosenberg does not teach or suggest a mouse with a control knob situated like the control knob on his remote control, and even if he did, he does not provide any information as to the configuration of the control knob on the mouse.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 8 unpatentable under 35 U.S.C. §102(b).

6. Dependent claim 11

Claim 11 depends from independent claim 1 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1. Furthermore, claim 11 specifically requires that the rotary dial is "tangentially accessible to a user from the entire circumference of the rotary dial." Whereas this may be the case for the control knob 54 on Rosenberg's remote control, it is not the case for Rosenberg's mouse wheel, where a user can only access a small portion of the circumference.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 11 unpatentable under 35 U.S.C. §102(b).

7. Dependent claim 21

Claim 21 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 21 specifically requires "wherein a substantial portion of the user input receiving surface is exposed outside of the mouse housing." In Rosenberg, a larger portion of the scroll wheel is contained inside the mouse housing.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 21 unpatentable under 35 U.S.C. §102(b).

8. Dependent claim 22

Claim 22 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 22 specifically requires "wherein the user input receiving surface is completely accessible to a finger of a user." In Rosenberg, a larger portion of the scroll wheel is contained inside the mouse housing. This portion is not accessible to a normal user.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 22 unpatentable under 35 U.S.C. §102(b).

9. Dependent claims 25 and 26

Claims 25 and 26 depend from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, in contrast to Rosenberg, claim 25 specifically requires, "...wherein the external surface corresponds to the top of the mouse housing," and claim 26 specifically requires, "wherein the external surface corresponds to the side of the mouse." As continuously mentioned herein, Rosenberg does not teach a mouse with a control knob 54 of the remote control. Even if he did, he is completely silent as to how the control knob would be configured on the mouse, even if it were possible to place the control knob 54 on the mouse. That is, he gives no indication of its orientation relative to the mouse housing, as specified in claims 25 and 26.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claims 25 and 26 unpatentable under 35 U.S.C. §102(b).

10. Dependent claims 27 and 38

Claims 27 and 38 depend from independent claims 20 and 1, respectively, and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claims 20 and 1. Furthermore, claims 27 and 28 specifically require, "...wherein the user input receiving surface of the disk is substantially flush with a top external surface of the mouse housing." In Rosenberg, the scroll wheel 16 protrudes out of the mouse 12, and the control knob 54 protrudes out of the remote control 50. *See* Figs. 1 and 3A, as well as the description on page 10, line 22 which states, "The wheel as shown only partially protrudes from an aperture 13 in the housing of the mouse 12..." With regards to control knob 54, no mention is made to placing control knob 54 on the mouse 12. Rather, the control knob 54 is placed on a remote control 50 or gamepad controller 60. Even if the control knob were placed on the mouse, Rosenberg only teaches the control knob 54 protruding from the top surface of the remote control (*see* Fig. 3 in Rosenberg).

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claims 27 and 28 unpatentable under 35 U.S.C. §102(b).

11. Dependent claim 28

Claim 28 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 28 specifically requires, "...wherein the plane of rotation of the disk is parallel to a top external surface of the mouse housing." The cited section of Rosenberg only shows how control knob 54 is "...oriented with an axis of rotation approximately perpendicular to the surface of the device 50..." It is acknowledged that this statement indirectly specifies a plane of rotation, but the plane of rotation is specified with respect to the remote control in Rosenberg, not with respect to "a top external surface of the mouse housing" as required by claim 28.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 28 unpatentable under 35 U.S.C. §102(b).

12. Dependent claim 29

Claim 29 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 29 specifically requires, "...the tactile elements including bumps extending from the user input receiving surface or voids representing removed sections of the user input receiving surface." In Rosenberg, the ridges or bumps are placed on the edge of the wheel not on the user input receiving surfaces, as required by claim 29.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 29 unpatentable under 35 U.S.C. §102(b).

13. Dependent claim 31

Claim 31 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 31 specifically requires, "wherein the encoder is an optical encoder." In Rosenberg, it appears that an optical encoder is only used for the vertical scroll wheel (*see* page 21, line5). It does not appear as if an optical encoder is used in conjunction with the control knob 54.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 31 unpatentable under 35 U.S.C. §102(b).

14. Dependent claim 37

Claim 37 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. As discussed above with respect to claim 20, Rosenberg discloses a mouse with a conventional vertical scroll wheel and mouse buttons, but not a configuration having a button and a disk rotably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, as required by claim 37.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 37 unpatentable under 35 U.S.C. §102(b).

15. Dependent claims 41 and 42

Claims 41 and 42 depend from independent claim 20 and are therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 41 specifically requires "wherein the disk is configured to sit in the mouse housing" and claim 42 specifically requires "wherein the top surface of the disk is level with the external surface of the mouse housing." Rosenberg only shows control knob 54 outside of the housing of the remote control. It does not sit in the housing, as required by claim 41. Nor is the top surface is level with the surface of the housing, as required by claim 42. Furthermore, Rosenberg does not show or otherwise disclose how the control knob 54 is never shown on a mouse housing. The control knob is only shown and described in the context of a remote control.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claims 41 and 42 unpatentable under 35 U.S.C. §102(b).

16. Dependent claim 43

Claim 43 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 43 specifically requires "wherein the disk is attached to a shaft that rotates within a shaft housing attached to the mouse housing and wherein the optical encoder includes a light source, a light sensor and an optical encoding disc having a plurality of slots separated by openings therebetween, the slots and openings breaking the beam of light coming from the light source so as to produce pulses of light that are picked up by the light sensor, the optical encoding disc being an integral part of the disk or a separate portion that is attached to the shaft." No such arrangement is taught in Rosenberg. The only evidence given by the Examiner is the reference to an optical encoder on page 21. This section, however, provides no details of the optical encoder. Interestingly, this is also noted by the Examiner on page 9 of the Final Office Action. Thus, Rosenberg fails to teach or suggest the elements of claim 43.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 43 unpatentable under 35 U.S.C. §102(b).

17. Dependent claim 56

Claim 56 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. As discussed above with respect to claim 20, Rosenberg discloses a mouse with a conventional vertical scroll wheel and mouse buttons, but not a configuration having a mechanical encoder and a disk rotably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, as required by claim 56.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 56 unpatentable under 35 U.S.C. §102(b).

18. Dependent claim 58

Claim 58 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. As discussed above with respect to claim 20, Rosenberg discloses a mouse with a conventional vertical scroll wheel and mouse buttons, but not a mouse with a disk rotably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, and where the top surface of the disk extends above the external surface of the mouse housing, as required by claim 58.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 58 unpatentable under 35 U.S.C. §102(b).

B) The rejection of dependent claim 18 under 35 USC § 103(a)

Claim 18 depends from claim 12 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 12. Furthermore, claim 18 requires "wherein the side to side rotation of the disk about the axis corresponds to horizontal scrolling, and wherein forwards and backwards rotation of the disk about the axis corresponds to vertical scrolling." The Examiner acknowledges that Rosenberg does not teach these features and relies on McLoone to provide these teachings.

However, McLoone does not overcome the deficiencies of Rosenberg. Neither reference teaches or suggests, "...a disk coupled to the mouse housing...the disk having a touchable surface for rotating the disk about an axis, the touchable surface being completely accessible to a

finger of the user such that the disk can be continuously rotated by the simple swirling motion of the finger," as required by claim 12 from which claim 18 depends. As shown in McLoone, a portion of the scroll wheel 30 is housed within the housing 61 of the mouse 60 and thus the scroll wheel 30 is not completely accessible to a user's finger.

In addition, neither reference teaches or suggests, "...wherein the rotation of the disk causes the displayed data to move... the displayed data is moved vertically or horizontally...side to side rotation of the disk corresponds to horizontal scrolling...forwards and backwards rotation of the disk corresponds to vertical scrolling...," as required by claim 18 and its intervening claims 16 and 17. In McLoone, the user rotates and laterally moves the wheel 40 relative to the keyboard housing 51 to produce vertical and lateral scrolling (page 3, paragraph 36). Lateral movement of the wheel 40 according to the McLoone includes both linear (that is, axi-lateral) movement of the wheel 40 relative to the housing 51 and tilting or pivoting the wheel 40 in a lateral direction (page 4, paragraph 37). Lateral movement of the wheel is not disk rotation, as required by claim 18.

Therefore, for at least these reasons, it is respectfully submitted that neither Rosenberg nor McLoone, alone or in combination, renders the invention as currently recited in claim 18 unpatentable under 35 U.S.C. §103(a).

C) The rejection of dependent claims 19, 32, 33, 53, 55, 59 and 60 under 35 USC §103(a)

Claims 19, 32, 33, 53, 55, 59 and 60 all depend from independent claims 1, 12 and 20 and are therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claims 1, 12 and 20. Claims 19 and 32 recite that the "mouse housing serves as a button of the computer mouse...providing a clicking action for performing an action on a display screen." Claim 33 specifies an actuation direction for the clicking. Claims 53, 55, 59 and 60 similarly specify that the "mouse housing has no mechanical buttons." The Examiner acknowledges that Rosenberg fails to teach a mouse having no separate mechanical buttons and where the housing serves as a button and relies on Justy to cure this deficiency.

In Justy, clicking is effectuated by tilting the mouse to either side. A slight tilt to the right side causes a "right click" to occur, and a slight tilt to the left side causes a "left click" to occur. "Double clicking" is done by tilting the mouse two times to the same side. However, Justy, similar to Rosenberg has a conventional vertical scroll wheel and does thus not cure the deficiencies of Rosenberg discussed above with respect to the independent claims 1, 12 and 20.

Therefore, for at least these reasons, it is respectfully submitted that neither Rosenberg nor Justy, alone or in combination, renders the invention as currently recited in claims 19, 32, 33, 53, 55, 59 and 60 unpatentable under 35 U.S.C. §103(a).

D) The rejection of claims 43 and 54 under 35 USC §103(a)

1. Dependent claim 43

Claim 43 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 43 specifically requires "wherein the disk is attached to a shaft that rotates within a shaft housing attached to the mouse housing and wherein the optical encoder includes a light source, a light sensor and an optical encoding disc having a plurality of slots separated by openings therebetween, the slots and openings breaking the beam of light coming from the light source so as to produce pulses of light that are picked up by the light sensor, the optical encoding disc being an integral part of the disk or a separate portion that is attached to the shaft." The Examiner acknowledges that no such arrangement is taught in Rosenberg, and relies on APA to provide this teaching.

However, even if the Examiner were correct in that APA teaches these features, there is no teachings in APA that would cure the other deficiencies of Rosenberg discussed above with respect to claim 20.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 43 unpatentable under 35 U.S.C. §103(a).

2. Dependent claim 54

Claim 54 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 54 specifically requires "wherein the encoder includes a plurality of detents that provide tactile feedback that informs the user when the disk has reached a certain position." Similar to claim 43, the Examiner acknowledges that no such encoder is taught in Rosenberg, and relies on APA to provide this teaching.

However, the applicant respectfully submits that the sections of APA cited by the Examiner (page 18, lines 1-3) do not disclose a prior art encoder. On the contrary, they describe a specific encoder used in accordance with the invention. The cited section of the specification

states "The encoder, whether mechanical or optical, generally includes a plurality of detents that provide a tactile way for the user to know when the encoder has reached a certain position." It is clear that this statement is not a general characterization of the prior art, but rather a discussion of a specific embodiment of the invention, which is claimed in claim 54. Thus the characterization of this statement as APA is improper. Furthermore, even if the Examiner were correct in that the cited section is APA, it does not cure the other deficiencies of Rosenberg discussed above with respect to claim 20.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 54 unpatentable under 35 U.S.C. §103(a).

E) The rejection of claim 57 under 35 USC §103(a)

Claim 57 depends from independent claim 20 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 20. Furthermore, claim 57 specifically requires "...wherein the top surface of the disk is recessed below the external surface of the mouse housing." The Examiner states "Rosenberg does not precisely teach of the top surface of the disk being recessed below the external surface of the mouse housing." The applicant has no objections whatsoever to this statement.

However, the applicant respectfully disagrees with that Brink cures this deficiency. The wheels in both Rosenberg and Brink are standard vertical scroll wheels. The top surface of the wheel therefore must protrude above the surface of the housing. This can be seen in Fig. 3 of Brink, for example, which shows the vertical scroll wheel protruding above the surface. *See* arcuate portion that sticks out above the surface in which it is positioned. Because it protrudes above the surface, it does not have a top surface that is recessed below the housing. The wheel simply would not work if it was arranged in this manner, i.e., there would be no surface to engage the wheel if it was recessed.

Furthermore, the device disclosed in Brink is intended to be an alternative to a conventional mouse in order to avoid common injuries associated with the use of conventional computer mice (Brink, paragraphs [0004]-[0005]). Thus, even if Brink did teach a "top surface of the disk being recessed below the external surface of the mouse housing," as alleged by the Examiner, there would be little or no motivation to combine Brink with Rosenberg.

Therefore, for at least these reasons, it is respectfully submitted that Rosenberg does not render the invention as currently recited in claim 57 unpatentable under 35 U.S.C. §103(a).

F. Conclusion

In view of the forgoing, it is respectfully submitted that none of the pending claims are anticipated or reasonably suggested in Rosenberg, McLoone, APA, Justy, or Brink, alone or in combination, and that the Examiner's rejections of the pending claims were erroneous. Therefore, it is respectfully requested that the Board reverse the Examiner's rejection and return the application to the Examiner with instructions to allow the application.

Respectfully Submitted,
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VIII. CLAIMS APPENDIX

CLAIMS ON APPEAL

1. (Previously Presented) A computer mouse, comprising a housing and a rotary dial positioned relative to an external surface of the housing, the housing providing a platform for sliding the mouse along a surface in order to move a cursor or pointer on a display screen of a computer system, the rotary dial rotating around an axis in order to implement a control function in the computer system, the rotary dial rotating within a plane that is substantially parallel to the external surface of the housing, the rotary dial having an engageable face for allowing a user to facilitate rotation of the rotary dial, the engageable face being completely exposed to the user.

2. (Previously Presented) The computer mouse as recited in claim 1 wherein the control function is associated with performing an action on a display screen.

3. (Previously Presented) The computer mouse as recited in claim 2 wherein the control function corresponds to a scrolling feature.

4. (Previously Presented) The computer mouse as recited in claim 1 wherein the control function is used to control various applications associated with a computer system.

5. Cancelled

6. Cancelled

7. Cancelled

8. (Previously Presented) The computer mouse as recited in claim 7 wherein the engageable face is substantially parallel to the external surface of the housing.

9. Cancelled

10. Cancelled

11. (Previously Presented) The computer mouse as recited in claim 1 wherein the rotary dial is tangentially accessible to a user from the entire circumference of the rotary dial.

12. (Original) A mouse for moving a cursor or pointer on a display screen, comprising:

a mouse housing; and

a disk coupled to the mouse housing and rotatable about an axis, the disk being configured to facilitate a control function on the display screen, the disk having a touchable surface for rotating the disk about the axis, the touchable surface being completely accessible to a finger of the user such that the disk can be continuously rotated by a simple swirling motion of the finger.

13. (Original) The mouse as recited in claim 12 wherein the control function is associated with performing an action on the display screen.

14. (Original) The mouse as recited in claim 13 wherein the control function corresponds to a scrolling feature.

15. (Original) The mouse as recited in claim 14 wherein the scrolling feature allows a user to move displayed data across a viewing area on the display screen so that a new set of displayed data is brought into view in the viewing area.

16. (Previously Presented) The mouse as recited in claim 15 wherein the rotation of the disk causes the displayed data to move across the viewing area of the display screen.

17. (Original) The mouse as recited in claim 16 wherein the displayed data is moved vertically or horizontally on the display screen.

18. (Previously Presented) The mouse as recited in claim 17 wherein side to side rotation of the disk about the axis corresponds to horizontal scrolling, and wherein forwards and backwards rotation of the disk about the axis corresponds to vertical scrolling.

19. (Previously Presented) The computer mouse as recited in claim 12 wherein the mouse housing serves as a button of the computer mouse, the mouse housing providing a clicking action for performing an action on a display screen.

20. (Previously Presented) A computer mouse, comprising:

a mouse housing that provides a structure for moving the computer mouse along a surface and for gripping the mouse for movement thereof;

a position detection mechanism operatively supported by the mouse housing, the position detection mechanism being configured for tracking the position of the mouse as its moved along the surface;

a disk positioned relative to an external surface of the mouse housing, the disk being rotatably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, the disk having a user input receiving surface for facilitating movements thereof about the axis, and

an encoder for monitoring the rotation of the disk about the axis.

21. (Previously Presented) The computer mouse as recited in claim 20 wherein a substantial portion of the user input receiving surface is exposed outside of the mouse housing.

22. (Previously Presented) The computer mouse as recited in claim 20 wherein the user input receiving surface is completely accessible to a finger of the user.

23. (Previously Presented) The computer mouse as recited in claim 20 wherein the disk is configured to facilitate a control function.

24. (Original) The computer mouse as recited in claim 22 wherein the control function corresponds to a scrolling feature.

25. (Previously Presented) The computer mouse as recited in claim 20 wherein the external surface corresponds to a top of the mouse housing.

26. (Previously Presented) The computer mouse as recited in claim 20 wherein the external surface corresponds to a side of the mouse housing.

27. (Previously Presented) The computer mouse as recited in claim 20 wherein the user input receiving surface of the disk is substantially flush with a top external surface of the mouse housing.

28. (Previously Presented) The computer mouse as recited in claim 20 wherein the plane of rotation of the disk is parallel to a top external surface of the mouse housing.

29. (Previously Presented) The computer mouse as recited in claim 20 wherein the user input receiving surface is substantially perpendicular to the axis and wherein the disk includes tactile elements for increasing the feel of the disk, the tactile elements including bumps extending from the user input receiving surface or voids representing removed sections of the user input receiving surface.

30. Cancelled

31. (Previously Presented) The computer mouse as recited in claim 20 wherein the encoder is an optical encoder.

32. (Previously Presented) The computer mouse as recited in claim 20 wherein the mouse housing serves as a button, the mouse housing providing a clicking action for performing an action on a display screen.

33. (Previously Presented) The computer mouse as recited in claim 32 wherein the clicking action is actuated in a direction normal to the mouse housing.

34. (Previously Presented) A computer mouse, comprising:

a mouse housing that provides a structure for moving the computer mouse along a surface and for gripping the mouse for movement thereof, the mouse housing serves as a button, the mouse housing providing a clicking action for performing an action on a display screen, the clicking action is actuated in a direction normal to the mouse housing, the mouse housing includes a base coupled to a body, the base being configured to make moving contact with the surface when the computer mouse is moved by the user, the body being configured to pivot relative to the base in order to generate the clicking action;

a position detection mechanism operatively supported by the mouse housing, the position detection mechanism being configured for tracking the position of the mouse as its moved along the surface;

a disk positioned relative to an external surface of the mouse housing, the disk being rotatably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, the disk having a user input receiving surface for facilitating movements thereof about the axis, the plane of rotation of the disk being substantially orthogonal to the direction of the clicking action; and

an encoder for monitoring the rotation of the disk about the axis.

35. (Previously Presented) The computer mouse as recited in claim 34 wherein the axis is obliquely positioned relative to the base.

36. Cancelled

37. (Original) The computer mouse as recited in claim 20 further including a button for allowing a user to make a selection on the display.

38. (Previously Presented) The computer mouse as recited in claim 1 wherein the engageable face of the rotary dial is substantially flush with the external surface of the housing.

39. Cancelled

40. Cancelled

41. (Previously Presented) The computer mouse as recited in claim 20 wherein the disk is configured to sit in the mouse housing.

42. (Previously Presented) The computer mouse as recited in claim 20 wherein the top surface of the disk is level with the external surface of the mouse housing

43. (Previously Presented) The computer mouse as recited in claim 31 wherein the disk is attached to a shaft that rotates within a shaft housing attached to the mouse housing and wherein the optical encoder includes a light source, a light sensor and an optical encoding disc having a plurality of slots separated by openings therebetween, the slots and openings breaking the beam of light coming from the light source so as to produce pulses of light that are picked up by the light sensor, the optical encoding disc being an integral part of the disk or a separate portion that is attached to the shaft.

44. (Previously Presented) A computer mouse, comprising a housing and a rotary dial positioned relative to an external surface of the housing, the housing providing a platform for sliding the mouse along a surface in order to move a cursor or pointer on a display screen of a

computer system, the housing of the mouse including a base and a button body that cooperate to contain the electronics of the mouse, the rotary dial rotating around an axis in order to implement a control function in the computer system, the rotary dial rotating within a plane that is substantially parallel to the external surface of the housing, the rotary dial having an engageable face for allowing a user to facilitate rotation of the rotary dial, the engageable face being completely exposed to the user, the rotary dial being rotatably coupled to the button body, the button body moving relative to the base in order to generate a clicking action for selecting and executing actions on a graphical user interface, the rotary dial moving with the button body when it is moved relative to the base.

45. (Previously Presented) The mouse as recited in claim 44 wherein a back portion of the button body has an external contour that substantially conforms to the contour of the palm side surface of the hand, wherein a front portion of the button body has an external contour that substantially conforms to the contour of the fingers of the hand when the palm side surface of the hand is placed on the back portion of the button body, and wherein the rotary dial is located at the front portion of the button body so that the fingers of the hand can easily manipulate the rotary dial when the palm side surface of the hand is placed on the back portion of the button body and the fingers of the hand are placed on the front portion of the button body.

46. (Previously Presented) The mouse as recited in claim 44 wherein the button body is pivotally coupled to the base.

47. (Previously Presented) The mouse as recited in claim 46 wherein the button body is pivotally coupled to the base via a pivot located towards the rear of the mouse, the pivot allowing

the button body to swing between an unclicked position, placing the body away from the base, and a clicked position placing the body towards the base.

48. (Previously Presented) The mouse as recited in claim 47 wherein the button body engages a switch located inside the housing and opposite the pivot when the button body is moved to the clicked position, the switch generating a command signal when the button body engages the switch.

49. (Previously Presented) The mouse as recited in claim 47 wherein the pivot includes a pivot support attached to the base, and a pivot pin attached to the button body, the pivot pin mating with an opening in the pivot support in order to pivotally couple the button body to the base.

50. (Previously Presented) The mouse as recited in claim 47 further including a spring mechanism for biasing the button body in the unclicked position.

51. (Previously Presented) The mouse as recited in claim 47 wherein the button body includes an inner shell and an outer shell, the inner shell being disposed between the base and the outer shell, the outer shell forming the exterior surface of the mouse, the inner shell covering electronic components disposed inside the mouse, the pivot including a pivot support attached to the base and an internal pivot pin attached to the inner shell, the pivot pin mating with an opening in the pivot support in order to pivotally couple the button body to the base.

52. (Previously Presented) The mouse as recited in claim 51 wherein the rotary dial is positioned within an opening in the outer shell and rotatably coupled to the inner shell, the rotary dial having a shaft that rotates within a shaft housing attached to the inner shell.

53. (Previously Presented) The mouse as recited in claim 1 wherein the housing has no mechanical buttons disposed thereon.

54. (Previously Presented) The computer mouse as recited in claim 20 wherein the encoder includes a plurality of detents that provide tactile feedback that informs the user when the disk has reached a certain position.

55. (Previously Presented) The computer mouse as recited in claim 20 wherein the mouse housing includes a front portion and a back portion, wherein the disk is seated in the front portion of the mouse housing, and wherein the front portion of the mouse housing has no mechanical buttons.

56. (Previously Presented) The computer mouse as recited in claim 20 wherein the encoder is a mechanical encoder.

57. (Previously Presented) The computer mouse as recited in claim 20 wherein the top surface of the disk is recessed below the external surface of the mouse housing.

58. (Previously Presented) The computer mouse as recited in claim 20 wherein the top surface of the disk is extends above the external surface of the mouse housing.

59. (Previously Presented) The computer mouse as recited in claim 19 wherein the mouse housing has no separate mechanical buttons disposed thereon.

60. (Previously Presented) The computer mouse as recited in claim 32 wherein the mouse housing has no separate mechanical buttons disposed thereon.

61. (Previously Presented) The mouse as recited in claim 32 wherein the mouse housing includes a base coupled to a body, the base being configured to make moving contact with the surface when the computer mouse is moved by the user, the body being configured to pivot relative to the base in order to generate the clicking action, the body being pivotally coupled to the base via a pivot located towards the rear of the mouse, the pivot allowing the button body to swing forward between an unclicked position, placing the body away from the base, and a clicked position placing the body towards the base.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None